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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,779	10/30/2003	Joseph P. Kennedy	1163.00	6911

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EXAMINER	
MOON, SEOKYUN	
ART UNIT	PAPER NUMBER
2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/24/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/24/2007.

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fadkt@skgf.com

Office Action Summary	Application No.	Applicant(s)	
	10/695,779	KENNEDY ET AL.	
	Examiner	Art Unit	
	Seokyun Moon	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 11-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-13* is/are allowed.

6)☒ Claim(s) *1,14 and 19-26* is/are rejected.

7)☒ Claim(s) *15-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicants' arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. **Claim 20** is objected to because of the following informalities: "*synch*". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 19** and **20** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to **claim 19**, the claim discloses that the respective video images are displayed by a respective first video input/output module of the first computer system and a respective second video input/output module of the second computer system. However, according to the specification and the drawing of the Application, the images are not displayed by "*Video I/O* module", but are displayed by "*display 116*" or "*monitor 114*". Examiner respectfully submits that the subject matter disclosed in the claim is not consistent with the aspect of the invention

disclosed in the specification. As best understood by Examiner, the claim limitation, "... *respective video images displayed by ...*" will be interpreted as "*... respective video images processed by ...*" for further examination purpose. Appropriate correction / explanation is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1**, **14**, and **19-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmonds et al. (US 6,646,645, herein after "Simmonds") in view of Takami (US 2001/0022523).

As to **claim 1**, Simmonds teaches an image display system for synchronizing the display of images on a plurality of display devices [abstract lines 1-4], comprising:

a first computer system ("*pc 50b*") generating a first signal representing first image data to be displayed on a first display device [figs. 2 and 3];

a second computer system ("*pc 50c*") generating a second signal representing second image data to be displayed on a second display device [figs. 2 and 3];

means (a combination of "*sync card 100*" and "*pc graphics subsystem 60*") [fig. 3] for synchronizing the first and second image data, [abstract] the synchronizing means comprising:

a master sync signal ("*reference clock*" and "*raster sync*") generated from a master sync signal generator ("*sync card 100a*"); and

a signal generating means for receiving the master sync signal ("*reference clock*" and "*raster sync*") and generating a video clock signal from the master sync signal wherein the video clock signal is synchronized with the master sync signal [fig. 5];

wherein if the video clock signal is no longer synchronized with the master sync signal, the signal generating means reestablishes the synchronization between the video clock signal and the master sync signal (regardless of the status of the synchronization of the video clock signal and the master sync signal, Simmonds' display system executes the synchronization process repeatedly and thus reestablishes the synchronization repeatedly); and

wherein the reestablishment of the synchronization between the video clock signal and the master sync signal occurs over a convergence time.

Simmonds does not teach the duration of the convergence time is programmable.

However, Takami teaches a phase lock loop circuit [fig. 3] used to sample or synchronize image signals, wherein the time period of the sampling or synchronization is variable (by changing the division value N of the frequency divider, the period of the sampling is changed or adjusted) [pars. (0115) and (0116)].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the phase lock loop implemented in Simmonds' display system to include the design of the Takami's phase lock loop circuit, in order to optimize the timing of the sampling or synchronizing of the image signals, thus to provide a stable display system [par. (0006)].

As to **claim 14**, Simmonds modified by Takami teaches the signal generating means to comprise a video input/output module [Simmonds: figs. 3 and 5] comprised of a phase-locked loop circuit [Takami: fig. 3] (Takami: "*PLL circuit 4A*") and a programmable digital rate controller (Takami: "*MPU 5A*");

wherein the phase-locked loop circuit (Takami: "*PLL circuit 4A*") generates the video clock signal (Takami: "*clock 107*") [Takami: fig. 3];

wherein the phase-locked loop circuit reestablishes the synchronization between the video clock signal and the master sync signal (Simmonds' display system executes the synchronization process repeatedly as discussed with respect to the rejection of claim 1); and

wherein the programmable digital rate controller (Takami: "*MPU 5A*") [Takami: fig. 3] controls a lock responsiveness rate (by changing or adjusting the division value N of the "*frequency divider 24*") at which the phase-locked loop circuit reestablishes the synchronization between the video clock signal and the master sync signal, wherein a faster lock responsiveness rate results in a shorter convergence time and a slower lock responsiveness rate results in a longer convergence time (as the value of N changes, the lock responsiveness rate increases / decreases and thus results in that the locking occurs within a shorter / a longer period) [pars. (0115) and (0116)].

As to **claim 19**, Simmonds [figs. 2 and 3] teaches the first and second image data comprising respective video images processed by a respective first video input/output module (a combination of "*sync card 100b*" and "*graphic processor 62*") of the first computer system ("*pc 50b*") and a respective second video input/output module (a combination of "*sync card 100c*" and "*graphic processor 62*") of the second computer system ("*pc 50c*").

As to **claim 20**, Simmonds [figs. 2 and 3] teaches the video input/output module (a combination of "*sync card 100*" and "*graphic processor 62*") further comprising a video generator (a combination of "*memory 64*" and "*graphic processor 62*") for generating a video signal in response to the video clock signal (the signal received from "*sync card 100*") which is synchronized to the master sync signal ("*reference clock*" or "*raster sync*").

As to **claim 21**, Simmonds [figs. 2 and 3] teaches each of the first image data ("*RGB analog video*" received from "*graphic processor 62*" included in "*pc 50b*") and the second image data ("*RGB analog video*" received from "*graphic processor 62*" included in "*pc 50c*") comprising a respective computer graphic image.

As to **claim 22**, Simmonds [fig. 2] teaches each of the first and second computer system further comprising a respective graphic processor ("*graphic processor 62*") for generating the respective computer graphic image.

As to **claim 23**, Simmonds [figs. 2 and 3] teaches each graphics processor ("*graphic processor 62*") generating the computer graphics images in response to the video clock signal (the signal received from "*sync card 100*") which is synchronized to the master sync signal ("*reference clock*" or "*raster sync*").

As to **claim 24**, Simmonds [figs. 2 and 3] teaches the image display system,

wherein the signal generating means comprises a video input/output module (a combination of "*sync card 100*" and "*graphic processor 62*");

wherein the first computer system ("*pc 50b*") comprises a first video input/output module and the second computer system ("*pc 50c*") comprises a second video input/output module;

wherein the first video input/output module and the second video input/output module receive the master sync signal ("*reference clock*" or "*raster sync*") from the master sync signal generator ("*sync card 100a*"); and

wherein the master sync signal generator is external to the fist computer system and the second computer system.

As to **claims 25** and **26**, Simmonds [figs. 2 and 3] teaches the signal generating means to comprise a video input/out module (a combination of "*sync card 100*" and "*graphic processor*

62") and the second computer system ("*pc 50c*") to comprise the video input/output module (a combination of "*sync card 100c*" and "*graphic processor 62*").

Simmonds does not expressly disclose the first computer to comprise the master sync signal generator, the master sync signal to be generated from the graphic processor of the first computer which is a master computer system, and the second computer system to be a slave system.

However, as Examiner acknowledges that specifying the first computer system to include a master sync generator and the master sync signal to be generated from the graphic processor of the master computer system which is the first computer system, is not a required design layout/specification but is one layout out of a plural design layout/specification options which includes a design layout/specification disclosed in claim 24, it is an obvious matter of design choice to have such an arrangement of the computer systems and to specify the first computer system being a master computer system generating the master sync signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Simmonds' image display system to use the first computer system as a master computer, to generate the master sync signal from the graphic processor of the master computer system, and to provide the master sync signal to the second computer system since any of the design layouts/specifications would perform equally well at synchronizing the video clock signal outputted from the second computer system to a master sync signal.

Allowable Subject Matter

7. **Claims 11-13** are allowed.

8. **Claims 15-18** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571)272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 19, 2007
S.M.

AMR A. AWAD
SUPERVISORY PATENT EXAMINER